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5 April 1965

MEMORANDUM FOR THE RECORD

**SUBJECT: Feasibility of the Proposed NRO Agreement Regarding the Allocation of Research, Development, Production and Procurement of Satellite Payloads**

1. In essence the Secretary of Defense's position appears to be that the CIA contribution to the development and production of new reconnaissance payloads should be limited to the generation of new concepts and the preparation and submission of conceptual studies, sketches and preliminary designs. In terms of funding, the level of effort contemplated for CIA would aggregate something between [ ] a year.

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2. The reasoning behind this position seems to be:

a. That participation by CIA as a producer of payload systems involves the dangers of uncontrollable competition and duplication and that only one agency (presumably under the Defense Department) should deal with contractors for the purpose of development, production and procurement of systems or large components of systems.

b. That allocation to CIA of responsibility for production and procurement of large components (e.g., payloads) of space units creates an unworkable interface at the point of assembly of payloads into the space unit. The argument seems to be that unless the unit responsible for the assembly of the total unit is responsible for production and procurement of all components of the ultimate unit, the administrative problem of overseeing and accomplishing the assembly of these components is diffused and unworkable. The Secretary used the [ ] project as an example of

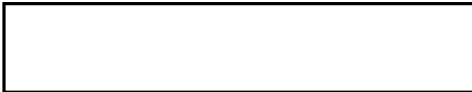
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NRO, Navy, OSD and DARPA  
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difficulties which they had had in the past under arrangements which made one agency responsible for payload development and a different agency responsible for the booster and launching aspects of the ultimate mission.

3. The CIA position, generally speaking, is that it would be undesirable, as well as ineffective, to confine CIA to an essentially advisory and idea-generating capacity. More active CIA participation in the development and improvement phases of satellite payload production is necessary:

a. To make sure that reconnaissance systems are designed and developed to serve intelligence purposes and are not degraded to accommodate non-intelligence purposes;

b. To ensure constant improvement in existing systems;

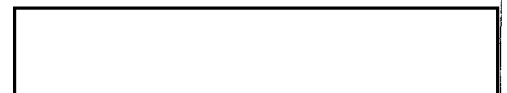
c. To utilize the drive, imagination and technical competence of the scientific, technical and engineering personnel assembled under CIA's leadership; and

d. To provide sufficient incentive to keep highly motivated and trained individuals on board.

4. It seems to be the general consensus that a CIA participation of the scope suggested by the Secretary of Defense is inadequate to accomplish any of the four objectives outlined above. To the extent that we are concerned to see that the best and most ingenious use is made of available hardware and that the configuration of new systems and components of systems (space vehicles, reentry capsules, etc.) are designed to make the optimum contribution to the intelligence mission, CIA representatives must be thoroughly conversant with all of the ingredients of space systems. In other words, it is necessary that there should be active participation in the program by intelligence oriented people who have the technical and engineering competence to understand not only the scientific and technical implications of a proposed design, but who also are able to understand the practical engineering problems which must be resolved in order to make the concept work. In order to attract and obtain personnel with the

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requisite knowledge and skill to understand and guide the development of systems, it is necessary to afford them the opportunity to participate in the development and engineering phases of a system's concept so that they may see and have a sense of identification with the fruition of the concept.

5. Unless this active identification is permitted and encouraged, the scientist or engineer who finds himself limited to conceptual studies and far-out research will succumb to frustration and either wither or go away. This is particularly true where the scientist or engineer finds his principal motivation in association and identification with a mission oriented agency. The converse of this is obvious. Unless the scientist or engineer is permitted to participate in the solution of the engineering and technical problems inherent in the development of a design, he will lose (or never achieve) a fully competent professional understanding of the potentialities or limitations inherent in any systems design.

6. The objective of maintaining informed understanding in the intelligence community of systems potentialities, and the objective of ensuring continued participation in the production and procurement of systems for the purpose of optimizing the chances for improving existing systems, both require the presence in CIA and the participation in systems development of highly competent scientists and engineers. It does not necessarily follow that these scientists and engineers have to control all payload development in order to accomplish these objectives. The fact that personnel of appropriate caliber and qualifications are actively participating in important elements of the program should provide substantial and probably adequate assurance that the program as a whole benefits from the scrutiny, initiative and energy of a group whose sole mission orientation is towards intelligence. If considerations of organizational tidiness and efficiency require that all payload development be under a single authority, then it would seem obvious that payload development should be the exclusive responsibility of intelligence oriented personnel. Accordingly, if one agency is to be given the exclusive responsibility for payload development, it should be CIA. It is somewhat of a truism to say that it is important to utilize the imagination and technical competence of CIA. Obviously you have it because you want to use it. The point is that unless you project the

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responsibility of the S&T element of CIA beyond the advisory stage, you will not be using it very effectively. Moreover, you will probably not be able to keep it. The Secretary of Defense professed to be skeptical about this point. He used the analogy of ARPA to prove that more or less detached thinking in the scientific and technical field could have useful results. I am in turn skeptical about the validity of the analogy to ARPA. In the first place, as the Director pointed out, ARPA and agencies responsible for development, production and procurement of systems designed or conceived by ARPA are all under the same management. Therefore, it is easier for a scientist or technician working for ARPA to have a sense of participation in the development of his concept. He has easier access to the authority responsible for approving the concept or design and easier access to the authority which administers the implementing contract than would a CIA scientist under similar circumstances. Thus the fact, if it is a fact, that ARPA can keep qualified personnel happy with far-out research responsibilities does not necessarily mean that CIA scientists would be equally happy under an arrangement which makes Defense Department agencies responsible for approving and implementing their studies. It is also not clear to me that ARPA has succeeded in attracting and maintaining a universally high competence among its personnel. (I note that Bob Sproull is presently retiring with no indication as to his successor.) I am also not sufficiently familiar with ARPA's history to know whether in fact it has contributed to the development of really significant weapons or other systems. Parenthetically, it might be argued that to the extent General Electric and other private industrial companies have succeeded in establishing research establishments exclusively concerned with far-out research, these elements, like ARPA, have at least had the advantage of functioning under common management and in reasonably close proximity with the echelons of management concerned with development and production. Here again, I believe that the experience in private industry with components confined to broad conceptual studies has been spotty and less than satisfactory, with varying degrees of success within individual companies and within industry at large.

7. In any event, the experience in this Agency has uniformly suggested that a competent scientist, technician or administrator will

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not be interested in a purely advisory role. This was Richard Bissell's strong reaction. Dr. Scoville spent much time and incredible energy fighting this battle, and Dr. Wheelon feels it more strongly than either of his predecessors. Whether they are totally justified or not is difficult for a layman to judge. However, their arguments, based on illustrative examples and experience, are strongly persuasive.

8. As regards specific analogies which have been referred to on one side or another, the following deserve some consideration:

 This is the project which the Secretary of Defense used to illustrate the argument that one agency must control the production and procurement of payloads and also the assembly and launching phases of a mission. Dr. Wheelon tells me that the Army designed a satellite (for communications purposes) which was too heavy. The second stage (CENTAUR), a NASA booster, failed. The trouble seemed to be that the Army lacked the competence to produce an appropriate payload and the Air Force failed or deliberately refused to develop a booster which would accommodate the payload. This is not necessarily a precedent for anything.

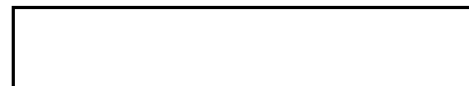


c. CORONA, under similar arrangements with CIA producing the payload, has worked reasonably well until recently.

d. British and Canadian satellite payloads are fired successfully by NASA, which also fired American made satellites for scientific purposes.



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f. Somewhat analogous are situations under which aircraft companies procure engine components from other companies, ships with nuclear propulsion are supplied with reactors by the Atomic Energy Commission, etc., etc.



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